

# LONG ISLAND SOUND **BLUE PLAN**

*Sustainable Ecosystems - Compatible Uses*

## PRACTITIONERS GUIDE



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# 1. INTRODUCTION

## 1.1 INTRODUCTION TO LONG ISLAND SOUND AND THE BLUE PLAN

The Blue Plan is a Marine Spatial Plan for Long Island Sound (LIS), the shared body of water between New York and Connecticut. The Sound is one of the most heavily used waterbodies in the United States, a fact that cannot be overstated when considering the challenges facing natural resource managers here. Twenty four million people live within 50 miles of the Sound, the Coast Guard issues more marine event permits here than anywhere else in the nation, and uses of its waters include an aquaculture industry worth more than \$30 million annually, shipping that brings the majority of New England's home heating oil, recreational fisheries that have produced world record striped bass and clearnose skate, production of the Navy's next-generation nuclear submarines, and the sailing, boating, and commercial fishing iconic of New England's coast.

Yet despite this intense pressure LIS remains ecologically rich. Seagrass meadows support the juveniles of many economically important species. Several protected species, from Roseate Tern to cold water corals, are native here. The National Marine Fisheries Service classifies the entire Sound as Essential Fish Habitat, and a National Estuarine Research Reserve is being proposed to study the unique conditions found here. The Sound is considered Connecticut's single greatest natural resource, and one need look no farther than the diversity and robustness of life found swimming, skittering, burrowing, undulating, and soaring through its many habitats to see why.

But the Sound is not static; none of the above can be taken for granted. Changes are coming to LIS; changes in use and changes in natural condition. We see some of these changes already: warming water temperatures driven by global climate change have altered species compositions, impacting fisheries, aquaculture, and conservation efforts. The human response to climate change has led to the development of offshore wind in

federal waters 80 miles east, which is expected to lead to the expansion of up to three ports in the Sound, and the eventual need to lay new transmission cables to points in Connecticut. Commerce is seeking new cross-Sound connections between the two states, and infrastructure projects of unprecedented size have been proposed at the western terminus of the waterbody.

New sustainable in-water projects bring needed economic growth but must be sited so that they do not significantly impact the individual and aggregate components of LIS that make it what it is. There is no coordinated means to manage the Sound as a whole; there is no collective vision for how we want to see our shared resource in 50, 100, or 500 years. The current permitting processes for approving offshore projects, such as LNG platforms, does not *proactively* protect important places, and this has led to intense controversy in the past. Nor do the current processes consider the cumulative impacts of these projects over time and the iterative loss of access and habitat. The Blue Plan, and the capacity it provides to grapple with siting questions in an informed, consensus-based way, could not have come at a more critical time.

## 1.2 PURPOSE AND CONTEXT OF THIS GUIDE

The final draft of the Blue Plan was completed and submitted to the Connecticut legislature in January 2020. The Blue Plan proceeded through a Public Hearing held by the Environment Committee, and was voted forward in the Legislative process. Two weeks later, on the last day of internal review before the Blue Plan would have proceeded to the whole Legislature for a vote, the COVID-19 global pandemic closed the State offices in Hartford. At the time of this writing many Americans are still sheltered in place and working from home, and all sectors of the Long Island Sound economy are proceeding into summer uncertain of their prospects. This pandemic, among many other things, has raised awareness among planners, industry, and regulators about how we use our

resources in LIS, how we remain resilient in the face of unpredictable and sudden challenges. It is the hope of the Blue Plan Development Team that the Blue Plan will provide tools that enable all users of the Sound to adapt to other changes that come to Long Island Sound.

This Blue Plan Practitioners Guide goes beyond the statutory requirements and bounds of the Blue Plan. There are four authorities in Connecticut that will be legally compelled to implement the Blue Plan in their review of permits governed under specific programs. However, the Blue Plan is a suite of tools and information that transcends this official purpose. The utility of the Blue Plan components does not end at the State line, or even with governments and planning organizations. In fact, the Blue Plan was assembled from the start to be something that fills multiple purposes, offering insight about the Sound that is useful to any interested party from fishers to researchers to NGOs to industry to the government agencies.

There are many ways to use the pieces of the Blue Plan; this Guide explores just a few. The cases presented here are examples of how disparate endeavors can benefit from the Blue Plan, not just the final product, but also the process by which it was built. As with all examples, this is not a comprehensive analysis of everything possible; rather, these instances should serve as inspiration to readers as to how they can benefit from knowing, understanding, and

applying the Blue Plan. There is a real need for this Guide as many participants stated that they and their colleagues would only use the Blue Plan if they both knew about it and knew how to navigate it. The Blue Plan is a decision-support framework intended to benefit all communities in the Sound collectively, not one single party; if proponents of the Broadwater LNG proposal had had a Blue Plan to consult, it is unlikely they would have proposed the project in busy areas of Long Island Sound. While this would have been a benefit to them, saving tens of millions of dollars, it also would have been a benefit for many local industry, conservation, research, and activist groups who committed untold hours and money opposing the project. More than a decade ago, the Blue Plan would have prevented strife, confusion, waste, and conflict.

The Blue Plan enhances conversation of Long Island Sound by identifying many sources of data available about the Sound and translating that data to accessible and understandable information. This information lets users know what is important to consider about each aspect of the Sound's ecosystem and tapestry of human activities. This Guide exists to help readers apply that information in their own work, whatever it may be. While this Guide, as a whole, illustrates the diversity of ways the Blue Plan may be applied to diverse goals and objectives, readers who are short on time are encouraged to see the Lessons Learned summaries at the end of each section.

## 2. METHODS AND PARTICIPANTS

To assemble this Guide, participants were identified from regional governments and planning entities that have a significant portion of their work centered around Long Island Sound. Participants were chosen from offices in both Connecticut and New York States, at federal, state, county, and municipal levels and across a range of disciplines. Most of these participants were familiar with the Blue Plan and had communicated with the Blue Plan Development Team to some degree while the Blue Plan was being assembled. None of these participants were expected to be experts in the Blue Plan, even if

they knew one or two aspects very well, and so it was anticipated from the beginning that conversations with them would need to be a back-and-forth exchange of information to learn about their programs, work, needs, and network; and participants learned about the Blue Plan components, process, and other practitioners. Through these conversations we expected to arrive at a mutual understanding of how the Blue Plan can be a tool that enhances their work, furthering the benefit of efforts that went into developing the Blue Plan.

This enhancement would be “informal implementation”: the use of plan or tools beyond the official mandate they are created to fill. Creative and informal implementation is a hallmark of Marine Spatial Planning, leading to benefits greater than the stated purpose of the effort. This Guide explores these opportunities for two reasons: first to work with participants to educate them about the Blue Plan so that they will be more empowered to use it going forward, and second to share those lessons learned with the wider community so that the general awareness and application of the Blue Plan continues to grow now that the outreach-intensive development process is wrapping up. These goals exist because supporting Long Island Sound is not just the task of regulatory authorities in Connecticut; it is a distributed responsibility to everyone who benefits from using the Sound. The wider the Blue Plan is recognized, understood, and applied, the smarter future water-related development will be; impacts to uses and resources can be proactively avoided, conflicts can be replaced with collaboration, and we can all be more informed and appreciative of the unique conditions that exist in our Urban Sea.

Participants in this Guide were identified from individuals or organizations who had engaged in the Blue Plan process for at least a limited time; this was selected as the preferred strategy so that they would have at least a basic familiarity with the Blue Plan and because it was assumed they have an interest in ocean planning and tools. Participants were contacted by initial and follow-up emails and by phone, and all conversations to inform this Guide were conducted by phone or web meeting, as driven by the ongoing COVID-19 pandemic. Conversations were held as semi-structured interviews with a single or small group of participants from each entity, and sought to elucidate what projects they work on, what their needs are from decision-support tools, and what information sources they currently use and what information do they wish they had. These conversations took generally about an hour, and a few included follow-up emails or calls with clarifying questions. Table 1 (on page 5) lists the participants and their affiliation.



Photo: Nathan Frohling

BLUE PLAN PRACTITIONERS GUIDE

Table 1: Participants in the Blue Plan Practitioners Guide

<b>PARTICIPANT NAME</b>	<b>TITLE</b>	<b>AFFILIATION</b>
Raul Irizarry	CT Program Manager, Parks for People	The Trust for Public Land
Alicia Mozian	Conservation Director	Town of Westport
Christine Nelson	Director, Land Use Department	Town of Old Saybrook
William (Bill) Cavers	Chairman, Advisory Commission on Coastal Waters	Town of Darien
August Ruckdeschel	Farmland and Open Space Coordinator	Suffolk County Dept. of Economic Development and Planning
Eric Lindquist	Environmental Analyst	CT OPM
Casey Personius	LISS Coordinator	NY DEC
Vicky O'Neill	Environmental Analyst; Long Island Sound Study Habitat Restoration & Stewardship Coordinator	NEIWPC
Mark Tedesco	Long Island Sound Office Director, Long Island Sound Study	US EPA
Mel Cote	Chief, Surface Water Branch, Region 1	US EPA
Julie Rose	Research Ecologist, Milford Lab	NOAA NMFS
Mark Dixon	Biological Science Technician, Milford Lab	NOAA NMFS
Cori Rose Regulatory Division	Senior Project Manager,	US Army Corps of Engineers (Corps)
Rick Potvin	Stewart B. McKinney Refuge Manager	USFWS
Allison Castellan	Coastal Management Specialist, Office for Coastal Management N/OCM6	NOAA
Jeffrey Flumignan	Acting Director, Office of Maritime & Intermodal Outreach	US DOT, Maritime Administration
Darryl Francois	Chief, Engineering and Technical Review Branch	BOEM
Leann Bullin	Program Manager, Renewable Energy Office; Ocean Planning and Regional Ocean Partnerships	BOEM
Jennifer Sheehy	Waterways Management Division Chief, Sector LIS	USCG
Adam Wright	Community Plans and Liaison Officer	US Navy Sub Base New London
Tracey McKenzie	Public Works Department	US Navy Sub Base New London
Jane M. Urban	Biologist, Environmental Division, Public Works Department	US Navy Sub Base New London
Michael (Mike) Brown	Environmental Division, Public Works Department	US Navy Sub Base New London

## 3. RESULTS: EXISTING OPPORTUNITIES FOR INFORMAL IMPLEMENTATION

### 3.1 MUNICIPAL AND LOCAL BENEFITS

During formation of the Blue Plan, it was anticipated that some of the greatest ancillary benefits would be to local and regional planning efforts. These organizations rarely have the capacity to produce detailed datasets or information from outside their immediate responsibilities and frequently rely on resources provided by the State or academic extension offices; in Connecticut this includes Connecticut Sea Grant (Sea Grant) and its partnership with UConn in the Center for Land Use Education and Research (CLEAR), and CT Environmental Conditions Online (CT ECO); which is itself a partnership of CLEAR and CT DEEP. CT ECO hosts diverse map viewers and data layers that many professional planners turn to, including the Blue Plan map viewer and geospatial information. In New York, much of similar capacity is provided at the County level and thus is more tailored to the unique

geography and needs of that region. In both states, professional planners likely also belong to the relevant chapter of the American Planning Association, which points viewers to new resources and tools, and provides a forum for knowledge-sharing and collaboration.

As professional planners report, the Blue Plan is exactly the type of decision support tool needed. However, during discussions to form this Guide, municipal planners in Connecticut reported that a barrier to applying the Blue Plan in their work is understanding how it translates to the municipal level, outside of local shellfish commissions that are statutorily required to consider the Blue Plan as a factor in their review of permit applications. Primarily, this is driven by the relative “newness” of the Blue Plan, and the sense that it is inapplicable to local concerns outside of the four statutorily-named authorities. Yet the Blue Plan provides great value to local planning efforts beyond



Photo: Middlesex Community College Center for New Media

shellfish applications: the description of available data in the Inventory, the information derived from this data in the mapped Ecologically Significant Areas (ESA) and Significant Human Use Areas (SHUA), and the associated guiding policies may all be used in proactive planning efforts not related to permitting at all. Moreover, as a decision support tool based on the best available science, using the Blue Plan allows planners to justify their actions and priorities when considering offshore projects. The rigor and legitimacy of the Blue Plan allows municipalities to make decisions confidently and in much greater awareness of the conditions that exist in and surround their geographic area of responsibility.

While many municipal planning entities have been focused on the waterfront for decades, their attention is primarily directed towards ensuring compliance with Connecticut Coastal Management Act (CCMA) policies, balancing conservation, access, and sustainable economic growth. This includes concerns related to coastal resilience or conservation in relation to sea level rise, pier and dock applications, and the waterward impacts of landside activities such as construction or stormwater runoff. Because of this, planners are likely to coordinate with other entities: local shellfish commissions handle most of the municipal focus on aquaculture activities, and will be statutorily required to implement the Blue Plan. Municipal harbormasters or harbor management commissions may also be responsible for evaluating proposed structures and in-water gear, navigability, and overall waterways coordination. These programs may have an interest in the Blue Plan and will derive benefit from it in the same way municipal planners might; the Blue Plan should be a useful tool for planners and harbor management to coordinate around. In fact, the Connecticut Harbor Management Association remained involved in Blue Plan development throughout the process and contributed to both the final Blue Plan document itself as well as the [User's Guide](#), and municipal harbor management commissions expect to use the Blue Plan in their work.

Additionally, planners do believe the Blue Plan will be useful to municipalities from a permitting standpoint,

but expect this will extend be based predominantly in the mapped spatial information and not the associated policies. The ESA and SHUA will allow both applicants and town-level regulators to know what areas to pay special attention to from the start of a project; the Blue Plan will help municipalities plan to site uses more easily, but towns are not expecting to evaluate impacts in relation to the Blue Plan policies, because these are seen as only needing to be recognized by the named entities. In permitting, town-level reviewers occasionally send applicants to the relevant State authorities to obtain those permits first; passing State regulation is seen as generally more stringent than local ordinances. In some cases, only once applicants have the relevant State permits will the municipal boards review their application. Planners anticipate that because the Blue Plan will be formally implemented by the State and local shellfish commissions, other town entities will not review the policies when considering relevant applications, and will not feel the need for their decisions to be consistent with the Blue Plan, as other regulators hold that responsibility.

Naturally, no two towns are the same, so will not benefit from leveraging the Blue Plan in the same ways. While some opportunities may remain across most municipalities, for example, incorporating the Blue Plan into progress along their regional Plan of Conservation & Development (more in Connecticut State Programs, below), many others will exist only in the local situation. The following examples highlight the broad range of applications of the Blue Plan tools, and towns and planners are encouraged to translate the lessons learned to their own needs and goals.

#### **Lessons Learned**

- ▶ State and County extension offices offer spatial resources and training opportunities for municipal planners and individuals.
- ▶ The Blue Plan is a decision support tool for the offshore and coastal environment that will help planners efficiently consider resources available, potential conflicts, track progress towards conservation and development goals, and justify funds spent.

### 3.1.1 IMPROVED WATERWAYS AWARENESS IN DARIEN

The Town of Darien maintains a unique structure for managing its Sound waterways. With neither a Harbor Management Committee nor a Shellfish Commission, the Town has combined these other responsibilities into an Advisory Commission on Coastal Waters that collaborates with the Town's upland Planning & Zoning Department. All members of the Commission are volunteers who manage coastal resources by providing input to the Board of Selectmen. Typical activities of the Commission include: review of pier and dock design proposals, ensuring safety of waterways through issuing of moorings and navigable channel maintenance, lease of commercial shellfish leases and restocking of recreational beds, civilian oversight of on-water police and fire services, and ecological restoration projects such as establishment of Osprey nest platforms. The Chairman of the Commission also sits on the Long Island Sound Study (Section 3.3.1) Citizen's Advisory Committee, and so is able to bring an informed regional perspective to the Commission. In general, the Commission relies heavily on piecemeal sources of information to base its decision-making on; this results in incomplete understanding of the larger context that Darien sits in and of resources available. In general, data the Commission uses are the CT [Shellfish Mapping Atlas](#), [Save the Sound health indicators](#), Long Island Sound Study resources, and informal connections with knowledgeable individuals.

During public review of the draft Blue Plan, the Commission engaged with the Blue Plan process in an active way. Because of the nature of the Commission, with representation from boating and yacht clubs, shellfish, conservation, and other interests together in a single body, as well as members having time available to engage, this group was able to participate more thoroughly than other municipal bodies. While there was the obvious benefit to the Blue Plan from this review in terms of improved spatial information and enhanced outreach opportunity (Darien hosted one of six public meetings on the draft plan), there were also direct and indirect benefits offered to the Commission as well. The direct benefits are easily quantified: improved mapping

of mooring, sail-use, and fishing areas, improved locations of marinas, and inclusion of water trails; all of which provide better awareness and coordination in planning and future projects around the area.

The indirect benefits are less tangible, but no less relevant: through their involvement in the planning process and consideration of data layers, the Commission has delved into the "fine print" of what the ESA and SHUA are, and the data that drive them. This has led to an awareness and consideration of the datasets and information that the Blue Plan ingests (for example, the CT Natural Diversity Data Base, NDDDB), and how these source data reflect actual conditions on the ground in Darien. Unpacking each of these datasets to understand what they represent and the applicability and shortcomings of each has given the Commission a much better understanding of when and how to use them in their own work as well as in how the State will use them in decision making.

Seeking to know what these data include has led to an interest in engaging with the authorities to revise and improve them, an endeavor which extends far beyond the scope of the Blue Plan. However, this desire to groundtruth public datasets is a boon to natural resources managers and researchers, both of whom often lack capacity to thoroughly update datasets that span large areas. It is possible that the Commission's desire and willingness to contribute to improving these data will enhance the work of other, statewide, efforts (again, such as the NDDDB). Through their thorough review of local data contained in the Blue Plan, the Commission engaged with other local actors, including land trusts. At that time, members of the Commission reported that this increased understanding between the two initiatives and laid the groundwork for future collaboration. Commission members remain interested in meeting individuals and organizations that curate data sources and hope that the Blue Plan can facilitate some of this. This may be able to come from both digging into the information contained in the Blue Plan, and also from the Advisory Committee process going forward.

Because the Commission was unaware of some publicly available data and resources before engaging with the planning process, the Blue Plan has introduced a larger awareness of the coastal waters around Darien into municipal decision-making. Engaging with this process has also helped the Commission begin to form connections with organizations that have similar missions and curate data sources. Having access to this consistent, vetted information will assist the Commission and its members in future decision-making; for instance, data sources used in the Blue Plan may also inform the Noroton River watershed plan.

### Lessons Learned

- ▶ By digging in to understand what the capacities and limitations of each dataset included in the Blue Plan ESA and SHUA the Commission is better able apply them in their own work.
- ▶ Furthermore, the Commission is able to identify where data improvements might be made, including those that would need to happen outside of the Blue Plan process.
- ▶ By seeking to improve datasets, the Commission is beginning to form new relationships with State-level organizations and what other local projects.

### 3.1.2 PUBLIC ACCESS IN BRIDGEPORT WATERFRONT PLANNING

Bridgeport is one of Connecticut’s three deepwater ports and a major hub of waterborne commerce. Most notably, Bridgeport is home to ferries that link Long Island and Connecticut, several large oil-handling facilities that provide heating and fuel oil for much of New England, oyster aquaculture, and a boatyard capable of hauling vessels up to 200 tons. The city has opportunity to grow its waterfront access and water-dependent use: nearly half of Bridgeport’s 25 miles of waterfront are publicly owned, but underused after economic downturn in the 20<sup>th</sup> century saw manufacturing and mill jobs leave the Connecticut coast (CivicMoxie, 2017).

This availability of coastal land is unique in Connecticut, and in 2016 Bridgeport engaged in a planning process and formed a Waterfront Master Plan that guides development of this public space. Implementation of this Plan is guided by the Waterfront Advisory Board; a group of community members and experts convened by the Trust for Public Land (TPL); a national non-profit organization dedicated to preserving and connecting people to parks and public access. The Advisory board, like the Master Plan, is driven by the goal of increasing



Photo: Middlesex Community College Center for New Media

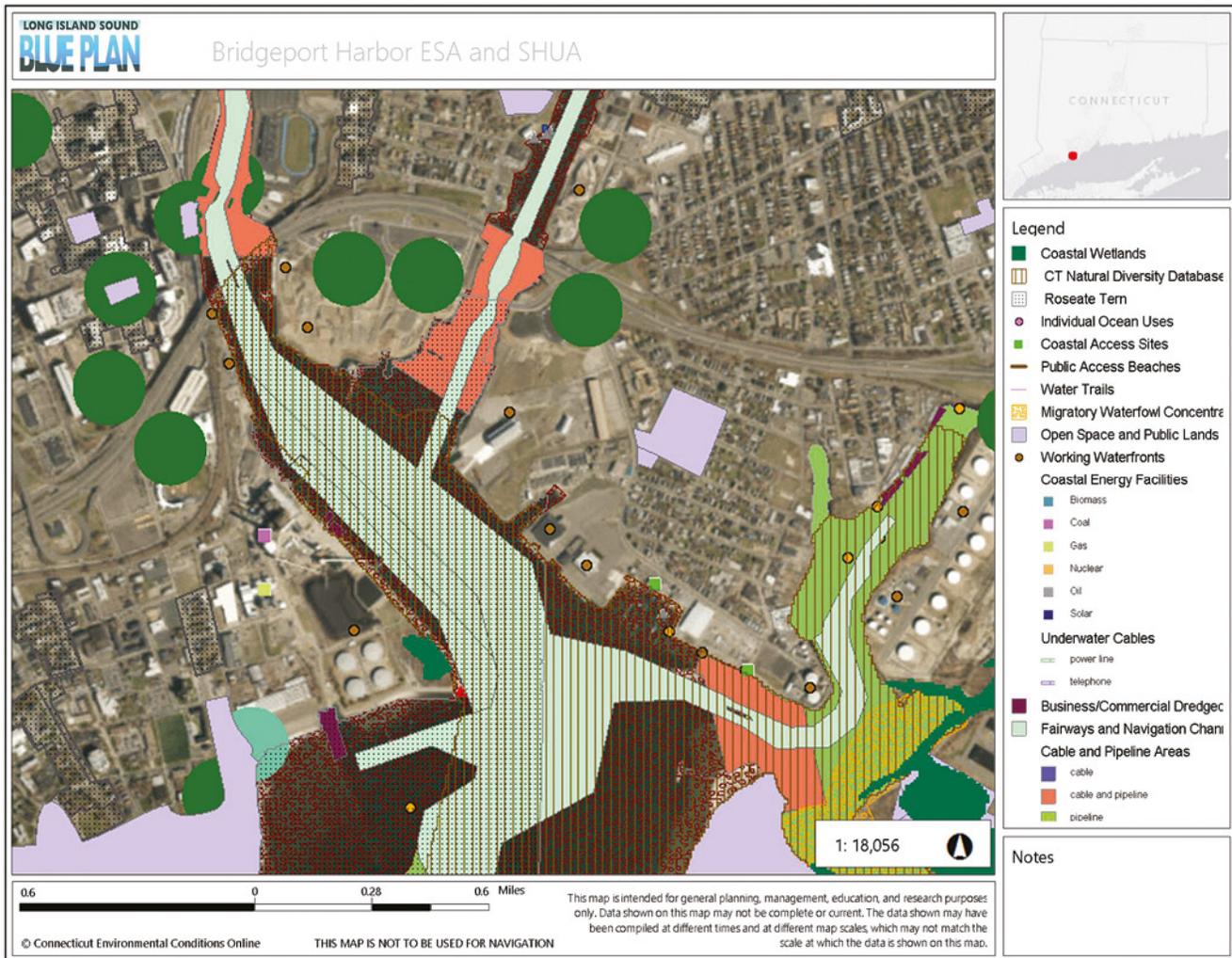


Figure 1: ESA and SHUA in Bridgeport Harbor

water-based access for recreation and economic growth with an eye towards long-term resiliency.

The Blue Plan offers significant informational resources to the Waterfront Advisory Board to use as they plan redevelopment of public land and partnerships with existing or potential water-dependent businesses. Bridgeport Harbor, the Yellow Mill Channel, and the Pequonnock River host numerous ESA and SHUA identified in the Blue Plan and visible in the map viewer (Figure 1) and TPL is already considering using the Blue Plan as an engagement tool to facilitate the Bridgeport community in thinking about the waterfront as an intriguing and desirable place to be and to generate

excitement about future plans; for example, thinking far down the road to what might be good to establish in the redevelopment of Pleasure Beach and mesh with what uses and resources already exist. Access to the map viewer also allows for common consensus and enhanced conversations with consultants who will help design structures and layout of redeveloped public space.

As representatives from TPL report, implementation of the Master Plan will benefit from an improved spatial understanding of the coastal area. The Waterfront Advisory Board can think of the ESA and SHUA not as areas to avoid, but rather as features and opportunities to incorporate into planning. For instance, knowing

the relationship of redevelopment sites to dredged and navigable waters could help identify where a community boating and sailing center might be located; similarly, knowing where high-density boating areas already are may promote the inclusion of public tie-up or dinghy dock capacity to facilitate connection by sea in addition to foot traffic. Components of adjacent Ecologically Significant Areas may be incorporated into signage, programs, or even restoration activities at redevelopment sites; for instance, Tongue Point is indicated to support both mobile invertebrates and Roseate Tern and identifying ways to improve feeding or breeding habitat for these may offer competitive advantage in grant proposals. Knowing where working waterfronts are may allow for collaboration with local business; identifying and inviting aquaculture into the planning process based on their needs may open up new markets for producers or provide the community jobs and access to local seafood. All of Bridgeport Harbor is an important angling area for desirable fish species; there may be opportunity for the City to partner with DEEP Marine Fisheries to establish additional “Enhanced Opportunity”

shore fishing sites to support subsistence fishing for Fluke and Porgy. Public and construction safety may be increased in planning by knowing where cable and pipeline, and high commercial shipping use, areas are. Information in the Blue Plan will allow for better communication with consultants who will help design structures and layout redeveloped public space, may open up creative working relationships with other Connecticut state agencies, such as the State Historic Preservation Office, as mapped locations of cultural resource sites and historic districts are included in redevelopment planning.

**Lessons Learned:**

- ▶ Blue Plan information may be used proactively to incorporate existing water dependent activities, both commercial and recreational, into waterfront redevelopment planning.
- ▶ The Blue Plan map viewer may be used as an engagement tool in a community planning process.
- ▶ SHUA and ESA can be boons to incorporate into planning for new development.



Photo: Middlesex Community College Center for New Media

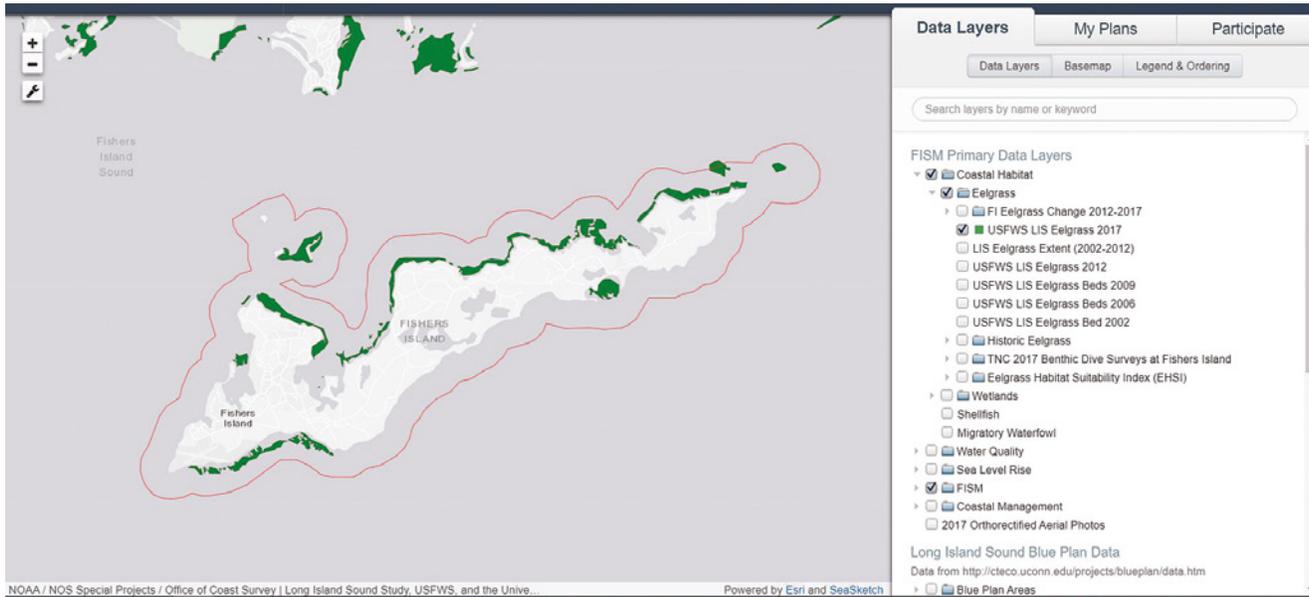


Figure 2: SeaSketch platform, showing 2017 distribution of seagrass around Fishers Island.

### 3.1.3 FISHERS ISLAND SEAGRASS MANAGEMENT PLANNING

The Blue Plan is currently being used in a local planning effort in New York. Fishers Island, situated approximately two nautical miles south of Connecticut’s eastern shoreline and 11 nautical miles northeast of Long Island, is surrounded by a quarter of the seagrass meadows remaining in the Sound. The island is a hamlet of the Town of Southold on the north fork of Long Island, but because of its proximity to Connecticut, it is publicly accessible by ferry only from Connecticut and is denoted with a Connecticut ZIP Code. Due to this, while the island is governed by New York state and town regulations, local boards and commissions operate with a high degree of independence.

In 2012, the New York State Legislature passed the Seagrass Protection Act to enable preservation of eelgrass ecosystems which have declined to 10 percent of their historic extent throughout the region. This law directs the New York State Department of Environmental Conservation (NYSDEC) to protect extant seagrass habitat and authorizes NYSDEC to regulate coastal and marine

activities that threaten seagrass habitat or restoration efforts by: 1) designating seagrass management areas (SMA), 2) developing and adopting management plans for each SMA, 3) consulting with local governments, recreational boaters, marine industries, fishermen, affected property owners, and other stakeholders to effectively manage, protect, and restore seagrass in New York waters, and 4) regulating marine and coastal activities to protect seagrass beds and restoration areas.

In 2017 a diverse group of Fishers Island-based businesses, conservation and historic preservation leaders, marine resource user groups, and town officials formed a coalition that is leading a community-based planning process, in cooperation with the NYSDEC and the Town of Southold, to identify a network of SMA around the Island to protect and restore seagrass from the impacts of boating, nitrogen loading, nearshore construction activities, and other local stressors. These impacts range from direct disturbance by anchoring and prop scarring to light starvation by algae blooms and structures. The island-based H.L. Ferguson Museum has hired an employee to help the Fishers Island Seagrass Management (FISM) Coalition coordinate the process,

which receives technical, planning, and facilitation support from The Nature Conservancy. More information on the FISM Coalition is available online at [www.fiseagrass.org](http://www.fiseagrass.org).

The FISM Coalition has undertaken a Marine Spatial Planning (MSP) effort to identify SMA and governing policies for these areas. In order to ensure that protection is effective, equitable, and broadly supported this process depends on the best available science and local knowledge, as well as meaningful dialog with relevant stakeholder communities. Because this MSP process is community driven, the Coalition is not just seeking to learn what areas would be best for seagrass, but also what behaviors the users of these areas may be willing to alter to improve seagrass health. This bottom-up approach is different from environmental protection efforts which are driven by scientific analyses of areas are best suited for preservation/restoration efforts and then prohibiting activities in those areas with minimal stakeholder consultation. The FISM Coalition seeks to learn from users, while raising awareness of the ecological importance and social benefits of seagrass and what options exist to allow sustainable use of eelgrass meadows. For example, instead of restricting boating access entirely in order to reduce damage from anchoring one option is to install conservation moorings for boaters to use that are specially designed to avoid damage to aquatic vegetation. Determining which areas may be best suited for conservation moorings will require dialog among Coalition members forming the draft plan and local users centered around a spatial understanding of where seagrass locations, how those areas are used, and available management options.

To accomplish this collaborative planning process, the FISM Coalition is using *SeaSketch*; an online platform that combines geospatial analysis with proposed management area and policy options through interactive mapping and discussion boards that are public-facing to facilitate participation. In this instance, the FISM SeaSketch project ([fism.seasketch.org](http://fism.seasketch.org)) has been loaded with data layers relevant to the project area, including the ESA and SHUA from the Blue Plan online map viewer as

well as US Fish and Wildlife Service seagrass map data, a season of local survey that groundtruthed seagrass extent and documented boating locations, and several other data layers (Figure 2). Many of the Blue Plan SHUA and ESA are expected to be useful in this process, including the Submerged Aquatic Vegetation (SAV) ESA and the many recreational-use SHUA.

An innovative use of the SHUA has already been shown by the FISM coalition: in order to identify stakeholders to proactively contact and involve in the planning process, members of the FISM SeaSketch project team used the map viewer to identify marinas, yacht clubs, and working waterfronts proximal to Fishers Island. Without the effort that went into the Blue Plan to identify these, and the inclusion of establishment names, this sort of rapid, place-based identification would have been impossible as these data were previously not publicly accessible.

Furthermore, it is expected that the *process* by which the Blue Plan was created will have direct benefits to the FISM work. The FISM Coalition is collaborating with several staff involved in the creation of the Blue Plan. These staff bring not only a knowledge of the technical details of the Blue Plan (e.g., what ESA or SHUA contain in terms of underlying data) but also knowledge of participants who engaged in the Blue Plan process and may, therefore, be more likely to engage with FISM planning as well. Similarly, because of the Blue Plan process, there is a better understanding of Marine Spatial Planning in the area, including among NYSDEC staff who are engaged in the SMA planning process. This understanding of a collaborative planning process is expected to improve participation among community interests and benefit from trust built and lessons learned during the development of the Blue Plan. For example, the Coalition hopes to engage Connecticut and Rhode Island commercial fishing communities in its planning with more success than past efforts (for example, the Army Corps of Engineers, section 3.3.2) because of experience and relationships built during the Blue Plan process. For instance, this could include making a special effort, if COVID-19 precautions allow, to meet fishers at their home docks at hours convenient to them, rather than placing a call during normal working hours.

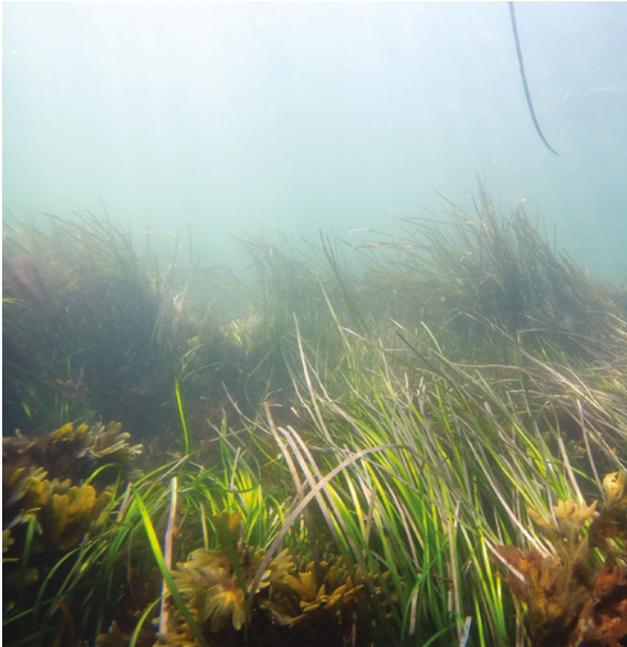


Photo: The Nature Conservancy

### Lessons Learned:

- ▶ Leverage relationships built in earlier projects
- ▶ Mapped Blue Plan information can be imported into external spatial planning platforms
- ▶ Marine Spatial Planning is effective and worthwhile at multiple scales – from place-based projects with specific relevant stakeholder groups to regional-scale planning
- ▶ A broader understanding of data driving each SHUA and ESA will allow users to make the most of and effectively incorporate more of these areas in their work, for both statutory (e.g., avoiding incompatible uses) and creative (e.g., contacting other users) goals. This will be especially important when Blue Plan development staff are not available for contact.
- ▶ The Blue Plan map viewer is a good starting point for site-based project planning and permitting purposes, but for local decision-making and management purposes (e.g. siting moorings, docks, aquaculture and submerged infrastructure, such as communication cables), finer resolution data and local information also needed.

### 3.1.4 PROACTIVE AQUACULTURE INDUSTRY SITING

Long Island Sound has a rich history of aquaculture production and innovation. The industry continues to grow today and drives not only the local economy but also research into new methods and cultured species. Planning is a significant part of this, and ranges in scale from individual lease procurements to development of new technologies. NOAA's Northeast Fisheries Science Center's Milford Laboratory exists to expand opportunity for sustainable aquaculture in the region and works in close collaboration with aquaculturalists and regulators to enable growth throughout the sector. Lab staff have identified several uses of the Blue Plan for the betterment of the industry beyond the recognition and protection it already affords existing aquaculture lease holders and publicly-accessible harvest grounds through the SHUA and ESA.

The aquaculture industry in Connecticut is becoming increasingly more sophisticated and incorporating more scientifically-collected data into processes to increase production. Milford Lab staff report that decision-support tools are in demand as part of this, but that typical planning and permitting exercises leave aquaculturalists feeling forced to work areas that are “left over”; locations that are not ideal for the culture of their product but are free of conflict with other users; in short, the places that no one else wants. Staff suggested that a better outcome may be locating new facilities and leases in areas that are not conflict free but are instead ideal for cultivation of a given product and finding solutions to those conflicts; in this paradigm the Blue Plan may offer several avenues forward and be a powerful tool for aquaculture.

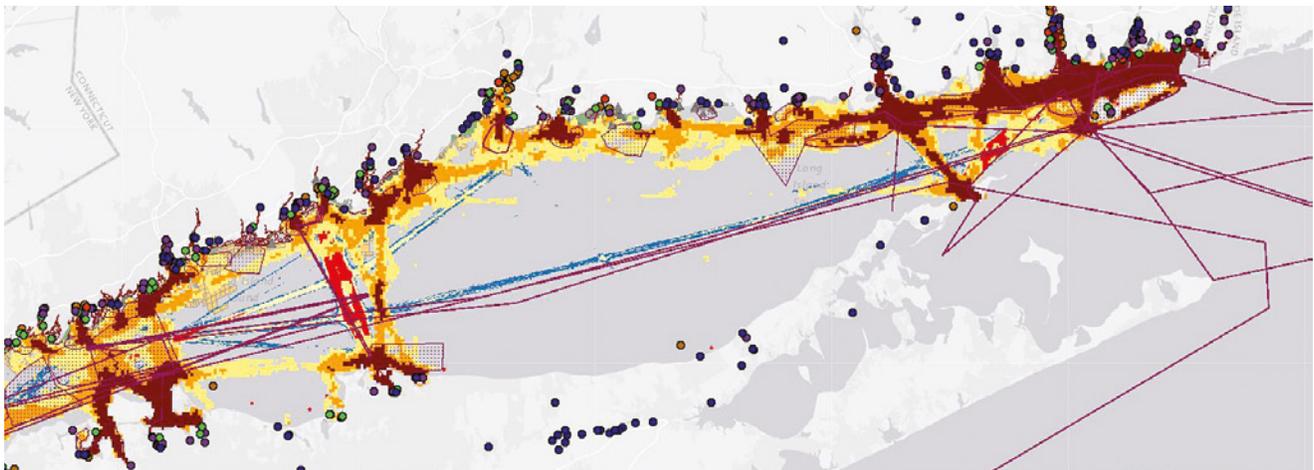
While the Blue Plan does not contain information about all conditions that combine to produce an ideal farm (such as bottom sediments, salinity, and temperature ranges), the SHUA and ESA offer insight into likely conflicts as well as some factors that are conducive to aquaculture. These may be used in tandem to identify areas for more detailed evaluation and then other resources, such as the Aquaculture Atlas, LISICOS, and Save the Sound water quality viewers can help flesh out details about local conditions. The Blue Plan map

viewer will be useful throughout this process; first for broad evaluation of areas that are relatively more or less desirable than others, and then for finer evaluation of specific questions. For example, project proponents can use the Blue Plan map viewer to explore boat traffic or presence of species of conservation concern and evaluate different gear types based on this spatial data. Similarly, the Blue Plan can assist proponents in proactively addressing potential sources of conflict by identifying and engaging other users, or resource managers, in collaborative conversations on a case-by-case basis to find solutions that work for everyone if there will be overlap between proposed aquaculture and areas identified in the Blue Plan. Often objections to aquaculture from other users arises in a reactive way. By using the Blue Plan to identify relevant user groups and engaging these parties early in the process aquaculturalists may be able to assuage fears that their operations will have negative impacts, illustrate why a particular site is desirable for cultivation, and exemplify the benefits sustainable aquaculture brings to the Sound and the regional economy. This proactive approach can help identify locations that are better suited for farmers' needs and build understanding and agreement among other users when establishing new aquaculture facilities.

It should also be noted that the Blue Plan helps project proponents identify resources and activities that will need to be addressed in the application process. Using the Blue Plan in this formal way is discussed in much greater detail in the [Blue Plan Users Guide](#), and anyone seeking a permit in LIS is encouraged to read this document first.

**Lessons Learned:**

- ▶ Blue Plan can be used by aquaculture industry to help identify places most conducive to their activities
- ▶ Blue Plan allows industry to identify potential conflicts early in the planning process and work with other users or managers on solutions up front or design projects to avoid these impacts (for example, choosing one gear type over another)
- ▶ Blue Plan can be a communications tool as to why the new activity is best sited in a particular location even if it is not entirely conflict free.
- ▶ Blue Plan [Users Guide](#) is helpful for aquaculturalists in seeking a permit.



*Figure 3: Relative dearth of water-dependent uses in Suffolk County along most of Long Island Sound. Note that areas serviced by ferries are highly active and support multiple uses.*

### 3.1.5 SUPPORTING ECONOMIC DEVELOPMENT IN SUFFOLK COUNTY

Suffolk County exists on eastern Long Island, stretching from Farmingdale to Montauk, and geographically includes both Forks, the Peconic Bays, Fire Island National Seashore, and Fishers Island. The north shore is linked to Connecticut at both its eastern and western end by the two major ferry routes in LIS, and nearly 1.5 million people live in the county. Land use along this shoreline is predominantly a mix of suburban and agricultural uses; there are comparatively few working waterfront or aquaculture facilities, marinas, and little boat traffic of any form along the majority of the coast. The two ports serviced by ferries, however, are important commercial hubs for both on- and off-water activities (Figure 3), and recreational fishing and diving occur along the north coast, in part supported by the NY DEC's Smithtown Reef artificial reef (NYS Department of Environmental Conservation, n.d.).

Suffolk County has an active Department of Economic Development and Planning leading a diversity of projects that range from farmland and open space preservation to

affordable housing to groundwater protection programs to downtown revitalization. Many of these programs, even if not directly focused on Long Island Sound, may incorporate information from the Blue Plan, including the development of working waterfront in appropriate locations. As with most governments, Suffolk has more demand for its GIS staff than they have time to contribute; this leads to some projects being stalled and others being outsourced to consultants at private-industry rates. County representatives also report that planners suffer from a fragmentation of geospatial data, with some detailed datasets being held by municipalities and not integrated together, and other datasets being unknown or only recently discovered; for example, County officials report discovering federal AIS commercial ship traffic data by participating in the Blue Plan process.

However, as spatial information is discovered, County officials are quick to spot uses for it beyond the original scope of the Blue Plan. One possible application may incorporate locations mapped in the Blue Plan into recreational travel routes by land and sea. Blueway Trails for paddle-powered boats are already established in other parts of Long Island and are recognized as a great



Photo: The Nature Conservancy

way for people to get outside, and interact with Long Island's many unique natural habitats and ecology while having minimal environmental impacts. Suffolk County is currently preparing a draft plan for a north coast Blueway and sees the Blue Plan as an additional information source in the development of these planning documents. Specific interest is in boat launches and linkages between these waterward points of interest. These may include marinas, the Visual and Scenic SHUA, and Salt Marsh and Eelgrass ESA, among others. Similarly, the County is also working to improve connections between existing trail systems and easements to create a network of hiking and sidewalk routes that allow safe, easy, and interesting travel by foot or bicycle. Since much of this is recreational travel driven by the desire to reach a destination, County planners see Blue Plan information as a good way to identify stops along the network. These may be Working Waterfronts and other commercial hubs as appropriate, Coastal Public Use Areas including Boat Launches and Marinas, public land, Cultural and Historic sites such as lighthouses, coastal fishing opportunities, and other SHUA and ESA from the Blue Plan, in addition to locations already identified on the County's *Choose LI—Local and Independent* website ([www.chooseli.org](http://www.chooseli.org)). Officials noted that the Blue Plan information is especially helpful because, geospatially, it integrates well with their own existing inventory for the project.

County officials also noted that components of the Blue Plan marine spatial planning *process* would be useful in their own waterways planning. The County is currently conducting the Ten Year Review of the Aquaculture Lease Program in Peconic Bay and Gardiners Bay. Overall goals of this review are to assess legal and administrative requirements of the program and to make recommendations. These recommendations are anticipated to address emerging forms of aquaculture (e.g., seaweed), as well as provide solutions to issues that have arisen since the original aquaculture plan was formed.

One issue is an ongoing conflict between specific aquaculture producers and the proximate boating community. Currently, all aquaculture leases within the Bays are geared; shellfish product is held in suspended bags or nets, bottom cages, or floating cages; each with

their own advantages and disadvantages. For example, floating cages are more accessible to farmers with restricted mobility (e.g., back injury) but present larger visual impacts. While an extensive and inclusive planning process was conducted prior to leases being issued, it was only after some facilities installed gear that members of the recreational boating community expressed concern and opposition to the farms on the basis of being a hazard to navigation and a detriment to the local viewshed. It is possible that following a planning process that included a broader swath of non-biased, scientifically-collected data up front could have avoided this conflict. For instance, boating use data, such as from the 2012 Northeast Recreational Boater Survey, was not included because it was not known about and there was not a push to identify this information up front. It is also possible that forming a visual impacts evaluation framework would have been beneficial; that both the final outcome (a framework) and the processes of hosting discussions with both aquaculture and boating sectors would have helped avoid the conflict that emerged later. Going through a process that considers the whole system and all available datasets, as the Blue Plan attempts to do, is a large undertaking, but may have identified conflicts up front and begun conversations to find solutions before leases were issued and gear installed. County officials believe that a process producing information and the policy guidance similar to what is in the Blue Plan would be helpful to navigate what uses are appropriate where, what areas are more or less suitable for aquaculture gears of different types, and how to evaluate the impacts and merits of proposed projects on nearby uses.

#### **Lessons Learned:**

- ▶ Blue Plan provides spatial information previously unknown by, but very useful to, many county-level efforts related to the offshore, bays, and coasts
- ▶ Blue Plan can be used to identify points of interest for travel and tourism
- ▶ Blue Plan development process of proactive engagement and including a holistic picture of the system, even if the use of information is not immediately obvious, can improve local planning

and zoning efforts and is worth the effort up front; may help minimize conflicts with the final plan.

- ▶ Having scientifically based, unbiased information publicly available allows for proactive over reactive conversations.
- ▶ Visual analysis and stakeholder input is valuable to include in planning efforts.

## 3.2 STATE AGENCY IMPLEMENTATION

### 3.2.1 CONNECTICUT

The Connecticut Department of Energy and Environmental Protection (DEEP) led the development of the Blue Plan as directed by the State Legislature (see Blue Plan, Chapter 1 for more information) and, as a regulatory agency, will employ the Blue Plan to improve management in Long Island Sound through the mechanism of clarifications and coordination within specific permitting processes overseen by four state and local authorities. As this guide illustrates, there are also many ancillary benefits that come along with the Blue Plan to the spectrum of users and natural resource managers that depend on and steward the Sound. These include benefits to other State programs not named in the Statute that created the Blue Plan. Three of these programs are discussed here: National Oceanic and Atmospheric Administration (NOAA) 309 funding, Federal Consistency provision of the federally-approved Connecticut Coastal Management Program (CCMP), and consistency coordination with the State's Plan of Conservation and Development (C&D Plan). Both of the NOAA programs are intended to improve states' management of their coastal resources, while the C&D Plan is intended to ensure coordination between the actions of numerous Connecticut agencies.

Among other sources, coastal states receive funding from NOAA to improve their Coastal Zone Management (CZM) programs through Section 309 of the 1990 update to the Federal Coastal Zone Management Act. This funding is directed at enhancing states' capacity to support programs in nine areas of national importance, including wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, special area

management plans, ocean and Great Lakes resources, energy and government facility siting, and aquaculture. On a five-year basis, state coastal management programs conduct an assessment of their efforts in each of these areas, then prepare strategies in consultation with NOAA to address the highest priority focus areas. By incorporating these strategies into their programs, state coastal management agencies receive funding from NOAA to implement the identified improvements. The process of developing the Blue Plan has been a Connecticut section 309 strategy during the last two cycles, enhancing efforts in several focus areas notably ocean resources, energy facility siting, and aquaculture. Currently Connecticut is conducting the 2020-2025 five-year assessment of its coastal management program, and DEEP will be able to point to the completed Blue Plan as a successful use of the previous commitment of federal funds. Further, the 309 assessment period will dovetail with the five-year statutory requirement to update the Blue Plan, so that a revision of the Blue Plan can constitute an upcoming strategy to address several of the enhancement areas. Moreover, the wealth of information contained in the Blue Plan can be used to identify future strategies and opportunities for enhancement projects. For example, NOAA staff note the Blue Plan could be used as a resource for programs that leverage 309 funding to assist municipalities in coastal planning related to one of the enhancement areas. Additionally, DEEP could use the strategy development process to secure funds and guide improvement of the Blue Plan itself and address identified data gaps or conduct needed updates to the document.

The Federal government occasionally conducts activities in Connecticut state waters that require CCMP consistency in the way any other privately-pursued project would. Federal uses are specifically defined and summarized in [a list online](#), but in general any project that consists of adding or removing material, establishment of operational zones, land leasing or ownership transfers, and issuing of licenses or permits require consistency authorization from DEEP as the State's coastal management agency. Upon approval by NOAA subsequent to legislative adoption, the Blue Plan will also become part of the state Coastal Zone



Photo: Christian Fox

Management Program, and will improve the State's Federal Consistency review by providing substantially more information for the State to base their evaluation and determination on and, as with private applicants, more information to Federal agencies when making their own consistency determination submissions. Furthermore, by including the Blue Plan policies as part of the CCMP, Connecticut will receive proactive review of federal agency permits and activities throughout LIS, including projects and programs that are currently not subject to review. This allows the State to better protect the existing uses and natural resources in the Sound from impacts without the need to prepare and submit any additional program change requests to NOAA. For more information, please see NOAA's Federal Consistency website: <https://coast.noaa.gov/czm/consistency/>

The Connecticut Plan of Conservation and Development (C&D Plan) guides the investment of State funds by agencies so that they are committed in ways that are environmentally sound and follow ecological best practices. The State Office of Policy and Management (OPM) is responsible for preparing the C&D Plan and ensuring that agency actions remain consistent, both with the C&D Plan and with actions other agencies

are taking. As directed by Statute, the Blue Plan was developed with guidance from OPM through its seat on the Advisory Committee and was reviewed by OPM for consistency before submitted to the legislature in late 2019. When the Blue Plan is approved, OPM expects to be able to use the Blue Plan to help resolve any conflicts that arise: similar to the federal consistency provisions described above, the Blue Plan details policies that are consistent with the State objectives in the C&D Plan, and therefore may be used to evaluate new projects. This means the Blue Plan will assist OPM in the same way it assists DEEP, by providing clarity to existing directives where there was previously a lack of guiding information and decision support tools.

**Lessons Learned:**

- ▶ Connecticut can use the Blue Plan to bolster its coastal program through improved grant applications and federal consistency
- ▶ The Blue Plan will help Connecticut track and implement C&D Plan priorities

**3.2.2 NEW YORK**

New York State is fortunate to possess three large waterbody systems: the Great Lakes, the Atlantic Ocean in the New York Bight region, and Long Island Sound. Of these, the Sound is the smallest and often is overlooked by the Empire State when compared to other aquatic resources. This disparity of scale was the primary driving factor in the minimization of New York involvement in the Blue Plan development process: the State's priorities simply lie elsewhere. That is not to say that New York does not maintain numerous programs within the Sound or provide opportunity for the constituencies on the north shore of Long Island: State agencies lead many enhancement programs, ranging from artificial reefs for divers and fishers to the enabling legislation for seagrass conservation effort (see Fishers Island, section 3.1.3), and the Long Island Sound Study receives support from New York as it does from Connecticut. The Blue Plan was built to be comprehensive for the entire Sound, intentionally inclusive of New York data and input, so

that it can serve programs in either state, as envisioned by both Connecticut and New York in the early Bi-State Marine Spatial Planning Work Group before the legislature in Hartford passed the legislation calling for a Blue Plan. New York State agencies remained critical partners in the formation of the Blue Plan: the Department of State (DOS, which houses New York's Coastal Management Program), Department of Environmental Conservation (DEC), and State Historical Preservation Office provided data on human uses, cultural history, ecological characteristics, and management areas; and DEC and DOS remained involved throughout the planning and public review process. Thanks to their continued participation, the Blue Plan is able to serve New Yorkers as well as it serves any marine practitioners interested in the Sound. While the opportunities presented below are a start, they are by no means comprehensive, and New York State agencies and authorities should consider additional avenues that will benefit from the tools in the Blue Plan.

New York counties with coastline on Western Long Island Sound are experiencing a surge of interest in bioextraction of excess nitrogen by kelp and shellfish aquaculture. This end of the Sound is poorly flushed and algal blooms and growth driven by excess nitrogen result in poor water quality, fish kills, and deteriorated quality of life and economic opportunity annually. Bioextraction is seen as a part of the solution, in combination with other efforts to reduce inputs of nutrients, and several groups are planning projects to be able to take advantage of opportunities, such as grant funding, when they appear. To enable these projects, DEC has recently released a Shellfish and Seaweed Aquaculture Viewer that incorporates data from a variety of sources to support better project siting decisions. This online mapping app is currently in the pilot stage, and the data it contains has not yet been translated to or augmented with decision-support information that is much needed by both the industry and regulators. Practitioners in New York expect that implementation of this tool will advance into identifying appropriate locations eventually, and that in order for this implementation to proceed the tool will need to incorporate components of the Blue Plan. This could entail using spatial information and the SHUA or

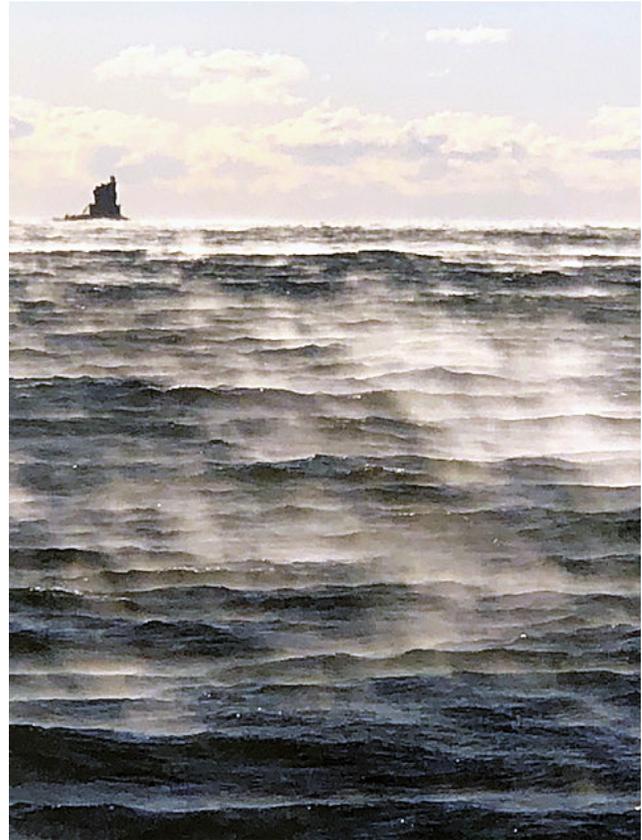


Photo: Jeanie Cook

ESA from the Blue Plan directly, or drawing on experience from the Blue Plan process to extract information from the data already contained in the viewer, or collaborating with other groups using the Blue Plan for their own aquaculture planning; possibly the NOAA Milford Lab (see section 3.1.4) or other shellfish restoration efforts in Connecticut. The Blue Plan will also be useful to entities as they plan to implement bioextraction projects. Funding opportunities, such as the NY Governor's Shellfish Initiative, place strong preference in the grant selection process on shovel-ready projects. Groups interested in pursuing these grants may be able to use the Blue Plan to identify project locations, and may even be able to begin conversations with natural resource managers and other local constituencies, using the Blue Plan map viewer. Doing this legwork up front, which only costs an investment of time to pursue, may allow projects to be more competitive during future funding bids.

Beyond bioextraction, DEC also regulates other activities in the Sound, ranging from food-grade aquaculture to angling to construction activities and beyond. The Blue Plan was always envisioned as a tool for evaluating permit applications in New York as well, and though there are many references back to other Connecticut statutes and standards throughout the Blue Plan policies, the guidance contained within the text and the description of the ESA and SHUA can be easily related to New York environmental protection goals and permitting standards as well. While New York agencies are under no obligation to utilize the Blue Plan, it is the sincere hope of the Blue Plan Development Team that the tools and information contained in the Blue Plan are useful to and used by regulatory authorities in New York to improve coordination and insight in their permitting processes as well.

#### Lessons Learned:

- ▶ New York agencies may choose to incorporate the information and guidance from the Blue Plan in their own permit and application review programs.
- ▶ New York planning projects, such as the DEC bioextraction siting tool, may be improved by incorporating components of the final Blue Plan in future iterations
- ▶ The Blue Plan can help prepare non-profits and industry to be ready to take advantage of State-issued grant funding as it becomes available

### 3.3 FEDERAL AND REGIONAL SCALE

While Long Island Sound contains no federal waters there are several federal programs that apply; these exist to help manage, coordinate, and enable local and regional efforts. All of these programs rely on spatial data to inform their responsibilities, but there are few universal datasets that all share. The programs included here are the most active and obvious; other programs exist, and may be administered by the same authorities or entities below, but are less commonly known and while they too may benefit from the Blue Plan, the ways in which that might occur were not discussed for this Guide.

#### 3.3.1 LONG ISLAND SOUND STUDY

The Long Island Sound Study (LISS) is a partnership of the EPA, New York, Connecticut, and local actors dedicated to improving the ecosystem health and human interaction with the Sound. Federal participation is enabled through the National Estuary Program (NEP) which provides staff capacity and funding to restore Estuaries of National Significance. Because the Sound is so heavily used and surrounded by such a dense population the LISS receives more funding than other NEP systems; the majority of this funding is committed to grant opportunities enabling work to improve the Sound. The LISS developed and implements the Comprehensive Conservation and Management Plan (CCMP) for LIS. The CCMP is not a step-by-step plan but rather a set of goals and targets that can be achieved by improved management and on-the-ground restoration efforts. Similarly, the CCMP has been described not as management, but as a way of managing the management (Holly Drinkuth, personal communication). The CCMP guides partner actions towards four primary goals: *clean waters and healthy watersheds; thriving habitats and abundant wildlife; sustainable and resilient communities; and sound science and inclusive management*; funding from the NEP is committed to projects that work to achieve these goals.

There is significant overlap in the goals of the CCMP and the vision of the Blue Plan. In fact, a marine spatial plan such as the Blue Plan is called for in the 2015 update of the CCMP as a means to progress toward many of the CCMP targets, and the LISS has been a major financial supporter of the Blue Plan process through the LIS Futures Fund grant program; this Guide is just one of the many outcomes of that support. The Blue Plan and the CCMP are inextricably linked and will continue to support each other through improved information and decision-support guidance. While this tensegrity will likely manifest in numerous small ways, there are several specific opportunities for the Blue Plan to support the CCMP and the LISS, and for the LISS to support the Blue Plan.

The most immediate of these will be use of the Blue Plan to inform actions towards CCMP goals by pairing products of the Blue Plan with other tools. One project that has

benefited and will continue to benefit from access to the Blue Plan is the New York Department of Environmental Conservation (DEC) work to compile a bioextraction siting tool (section 3.2.2) and expand use of that tool. This project is being conducted with LISS funding and, as mentioned above, seeks to expand into a suite of tools that aquaculturalists can use to design and site projects. Like the Blue Plan, this suite of decision-support tools and information will have many benefits that spread out to subsequent individual projects that collectively make tangible changes in the water towards a healthier, cleaner Sound. Pairing this effort, which will help identify places that are good for aquaculture, with the Blue Plan, which identifies potential conflicts, allows projects to be planned in a way that is constructive for everyone. This may include accepting that areas ideal for bioextraction may experience use conflicts, but by knowing what those existing uses are through the Blue Plan they can be addressed proactively: having and using both tools is a starting point for discussions and a way to evaluate other options. Other LISS-supported projects will be able to combine their products with the Blue Plan in similar but different ways for greater overall implementation.

For example, a new and comprehensive nitrogen loading model currently being conceived will produce outputs that allow for evaluation of changes in sources, so that resource managers can see what efforts would have the greatest reduction in eutrophication at different locations around the Sound. Pairing this with the Blue Plan SHUA and ESA will allow actions to be prioritized so that they have the greatest conservation benefits.

One of the challenges in conservation is conveying the value of actions taken and justifying the cost of monies spent; this is a particular concern for an organization like LISS that is very much in the public eye and handles large dollar amounts. The SHUA and ESA in the Blue Plan can be used here as a communications tool to help convey the benefits of investing in restoration projects. This may require translating the ESA into monetary value for their ecosystem services; while this is not within the purview of the Blue Plan, anyone interested in doing such would be able to leverage the Ecological Characterization report and Resource and Use Inventory as initial source material. Pursuing this effort may help demonstrate the economic benefit of shellfish, salt marsh, and eelgrass restoration, as investing in each of these habitats (or, better yet, all three



Photo: Middlesex Community College Center for New Media

combined as a single system) produces returns in thriving fisheries and stable coastline far beyond the dollars initially spent. Knowing the existing spatial extent of these resources from the Blue Plan provides both a starting point for pursuing restorative activities. Furthermore, using the process of marine spatial planning, practiced by many constituencies and partners to form the Blue Plan, will lead to better and better supported restoration projects that benefit not just those involved but everyone who depends on the Sound. Keeping the planning process alive, in tandem with the outcomes from the Blue Plan, will be able to improve the processes of future projects implementing actions to support the CCMP.

Because a marine spatial plan is called for in the 2015 CCMP, federal dollars were relatively easily justified to be committed to the Blue Plan. In an elegant parity the Blue Plan will now help enable new projects to be eligible for federal funding and help guide funding to where it will have the greatest benefit by being useful on both sides of the application process. The Blue Plan will help applicants identify project locations; for instance, if researchers are interested in studying the interaction of wild or farmed shellfish and eelgrass, the map viewer will allow them to select sites in both Connecticut and New York, and compare these sites with access points and other qualities. This is particularly true if applicants are new to LIS and less inherently familiar with the conditions that exist. The Blue Plan will also help LISS staff to evaluate applications and choose between proposals by seeing what impacts to resources might need to be considered and what opportunities exist. The LISS may wish to point to the Blue Plan resources from their website; this will allow researchers, applicants, and the general public exposure to the Blue Plan they may not have had otherwise.

Lastly, the LISS will also have a hand in guiding improvements to the Blue Plan. Because the Blue Plan is a tool to enhance numerous other projects and partners, there will be benefit to committing resources in the future to ensure it remains at the cutting-edge of available data and LIS needs. This may not be a large commitment, but simply enough capacity to ensure that new data is incorporated into the Blue Plan. For instance, LISS is currently supporting a number of institutions to conduct

high-resolution seafloor mapping and ROV surveys of the Sound in a multi-phase project to characterize the benthic habitats in detail. This data will inform many LISS and partner projects; hydrodynamic modeling, restoration activities, and baseline monitoring, to name a few. This dataset will also improve characterization of the ESA in the Blue Plan when complete, allowing the Blue Plan to be a better, more precise and complete tool for all the opportunities outlined here. By supporting projects like the benthic mapping effort, LISS facilitates the development numerous resources for everyone interested in the Sound to use. The LISS could also support the Blue Plan by specifically funding and filling data gaps that were identified in the process of assembling the LIS Resource and Use Inventory; these gaps are called out in each Inventory chapter and range from “largely lacking” pelagic bird surveys to a dearth of spatial information on aquaculture and shellfishing in New York driven by how the state, and municipalities, account for this activity, to the complete absence of a Soft Bottom Benthic Communities ESA driven by numerous factors. By supporting the gathering of information and the associated natural resources management considerations in topics that are of greatest need throughout LIS, the LISS could ensure the Blue Plan remains an increasingly-valuable tool that enhances other projects. A challenge to decision-support tools is that they are often piecemeal or become outdated; we are very good at making better tools, but often fail at making tools better. By continuing to invest in the Blue Plan the LISS can help promote guidance that is readily accessible, well known and accepted, and not confusing; having fewer, better tools as a resource will enhance coordination and allow us all to make smarter decisions.

Perhaps the single greatest action LISS can take to support the Blue Plan, and through it the Sound and the many activities that do and will occur here, is to continue to raise awareness about its existence and applicability. Translating the somewhat esoteric value of hydrodynamic modeling and benthic surveys to on-the-ground projects and changes that the public sees is a perpetual challenge in science and management. Keeping the Blue Plan and similar decision support tools front-and-center in the



Photo: Middlesex Community College Center for New Media

public eye not only helps the efforts that created those tools achieve their goal of smarter management, it also helps the LISS justify dollars and time spent pursuing these endeavors. The Blue Plan is meant to be many things; development and conservation guidance, a communications platform, an educational resource; by ensuring that it is seen as a first-stop resource for engaging with Long Island Sound, the LISS can also maintain the Blue Plan as a means of putting rigorous science in the hands of the public.

**Lessons Learned:**

- ▶ CCMP and Blue Plan are mutually supportive; each helps enable further progress towards the goals and tools provided by the other
- ▶ Blue Plan pairs with other existing and forthcoming tools to improve management and science for all of LIS beyond what any one tool provides alone.
- ▶ The Blue Plan helps applicants prepare research and restoration proposals and helps LISS staff review those proposals.
- ▶ Blue Plan helps LISS communicate the value of ecosystem components and restoration activities
- ▶ LISS helps improve the Blue Plan by supporting research that informs many different endeavors
- ▶ LISS can help improve use of the Blue Plan, and thus all the above listed benefits, by promoting it as a decision support tool.

### 3.3.2 INFORMING AND COORDINATING FEDERAL PERMITTING

Some activities in Long Island Sound fall under federal management or require federal permits instead of or in addition to authorization from relevant state programs. There is no single federal entity responsible for managing or regulating the Sound's natural resources: NOAA National Marine Fisheries Service (NMFS), the US Fish and Wildlife Service (FWS), the Coast Guard (see below), US Environmental Protection Agency (EPA), and others play a part through various programs that have jurisdiction nationally, including in LIS. While every agency has its own responsibilities and expertise, there are several commonalities: all agencies are required to use data that meets federal mapping standards when using it for decision making, and all federal decisions are required to be consistent with enforceable state coastal management policies (see section 3.2.1). Furthermore, all agencies report a single greatest challenge: the shortage of staff capacity to pursue the responsibilities they are charged with to the fullest degree possible.

This disparity is starkly true for the federal agency responsible for issuing the most permits in LIS: the US Army Corps of Engineers (Corps) issues permits related to discharges into or filling of waterbodies throughout the nation through section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. In Connecticut, this includes everything from installing a culvert in the upland to disposal of dredged material at any of the designated disposal sites in LIS, although many Corps authorizations are in the form of general permits which effectively piggyback on the state permit process. These permits are issued to individuals, municipalities, state actors, and other federal agencies. All of the determinations made by Corps are heavily dependent on geospatial information, and the agency relies on many different sources for this information, as long as the data and information they contain meet federal mapping standards. Frequently-consulted sources include the viewers hosted by CTE CO (section 3.1) and specific categorical portals, such as the Essential Fish Habitat Mapper maintained by NOAA Fisheries. In some instances the needed information

has never been mapped, such as discrete areas of commercial fishing activity, and Corps will attempt to contact knowledgeable individuals on a per-application basis. However, with only four permitting staff in the New England District, the Corps is often not able to pursue this information if initial requests go unanswered.

The Blue Plan integrates well into Corps needs in Long Island Sound. By providing considerable information on resources and the impacts they are susceptible to, the Blue Plan documents together will help permitting staff review applications more efficiently and completely, including gaining a better idea of specific entities to reach out to if more information is needed. Corps staff report that the Blue Plan Ecological Characterization provides greater detail on some datasets than is available from their usual sources: for instance, when the ESA for Rare, Sensitive, and Species of Concern is teased apart the spatial information for sturgeon is more discrete in terms of critical habitat vs. migratory corridors and “hotspots” than is available through the NMFS sources the Corps typically uses. Staff report that this level of detail will allow them to make much more informed decisions going forward. By digging into these additional documents Corps staff are able to learn more than ever before about the resources they are charged with protecting in LIS. Corps staff report that applicants and external partners are often confounded and frustrated by confusing state processes, but that having the detail in the Blue Plan will allow them to get the basic information they need to move projects ahead. For example, project partners or applicants may need to address the impact of their project on sea turtles, both for CT DEEP and for the Corps. There is relatively little information available on the distribution, seasonality, and susceptibility of turtles in LIS, so both applicants and regulators at the Corps are uncertain as they proceed with proposed project review. Having increased information on turtles in the ESA, the Resource and Use Inventory, and the Ecological Characterization will allow everyone involved to make better decisions regarding these species.

Localized permitting is not the only activity where the Corps expects to be able to use the Blue Plan. As a large

public infrastructure organization involved in many on the ground projects, the Corps also works to prepare Environmental Impact Statements, identify mitigation actions to offset impacts that cannot be avoided, and conduct restoration projects to improve ecological conditions related to all waterways. For example, the Water Resources Redevelopment Act authorizes the Corps to identify and pursue projects related to flood prevention or environmental enhancement activities. These efforts are conducted in partnership with outside entities; particular areas of interest in Long Island Sound are providing increased sea- and shore-bird habitat on islands and beneficial reuse of sediments for salt marsh restoration. The Corps expects that the Blue Plan will be helpful in preparing for these projects in multiple ways, including selecting project sites, identifying partner organizations, helping select sediments clean enough for beneficial reuse, and for producing maps to use in planning and communications. Using the Blue Plan mapped information as a communications tool will be powerful for the Corps to bring to meetings with external partners on all types of projects, and provide a platform to discuss what exists in the marine environment with constituencies ranging from aquaculture to marine surveyors and engineers.

The Blue Plan has already been used to facilitate at least two federal permits. The Navy's Sub Base New London is conducting two projects associated with the next generation of national defense activities: relocating the magnetic sensing array in association with Electric Boat's (EB) facility expansion, and pier redevelopment to prepare for sea level rise. The Navy is familiar with the Blue Plan from its participation in the planning process. At that time their interest was primarily from a national security standpoint – ensuring the Blue Plan would not divulge any sensitive information – but after initial conversations staff at the subbase continued to follow the development of the Blue Plan and were aware of the content of the map viewer. Staff recognized early on that this content integrated well with their own internal surveys and models for standards for allowable noise propagation in water from pile driving as well as the distribution of coastal resources and marine mammals. However, the

Navy's localized survey only covers the area immediately around the base, from a little north of the docks south to the Gold Star Bridge. Having access to information that is both comparable and additive to their existing guides allowed the Navy to pursue necessary authorization faster.

The primary environmental concern with redevelopment of the piers at the subbase was noise pollution. The piers at the base are large industrial structures fabricated primarily from reinforced concrete; they are large enough to stage military machinery, from trucks to forklifts to torpedoes, and are designed to berth Virginia-class submarines in hurricane conditions; to give a further sense of scale the funding Congress approved to build a single new pier is over \$72 million (Radelat, 2020). Furthermore, the new piers are elevated several feet over the existing piers to accommodate sea level rise forecasted into the next century. Demolition of the old pier and construction of its replacement will produce significant noise impacts; significant enough that the Navy was required to seek an Incidental Harassment Authorization from NOAA NMFS for any inadvertent and unavoidable impacts to marine mammals. Combining their observed and modeled marine mammal data upriver with the Blue Plan data and information on marine mammals between Groton and the Race, the Navy was able to efficiently prepare an application for the Harassment Authorization and provide sufficient information to receive the permit from NMFS.

The Navy reports that the majority of the environmental authorizations they are seeking recently are Incidental Harassment Authorizations associated with construction activities; this is also true of the planning and permitting necessary to move the magnetic silencing array in the lower Thames River south from expansion of the Electric Boat facility. In this case there was also concern that other resources, including eelgrass and shellfish beds, and cultural history sites, may be impacted as well. The Navy was able to map these sites on the Blue Plan map viewer and export these static maps to share with their contractors; contractors were then able to use these maps to follow up with appropriate authorities, in particular the CT State Historic Preservation Office, and confirm that



Photo: Christian Fox

no known sensitive resources would be impacted. This consultation was streamlined by having the information being available publicly, and by the interface allowing users to export custom maps. Furthermore, by being able to layer this information with other layers relevant to the project, the Navy was able to better site the project and pursue necessary State and federal authorization to proceed. As noted by Coast Guard staff consulted for this project (section 3.3.4), another benefit provided by the Blue Plan is the ability to identify stakeholders to proactively involve in public meetings on national security projects. The Navy held several public meetings during the planning process for relocating the magnetic silencing array; it is not known if they used the Blue Plan to seek out stakeholders to include, but it is possible that either already or going forward they may use the Blue Plan to help find entities that should be aware of the project.

**Lessons Learned:**

- ▶ Federal agencies are already using the Blue Plan in permitting
- ▶ Blue Plan offers federal agencies more detailed information for LIS than has previously been available through internal systems

- ▶ Reviewing just the mapped extent of the ESA and SHUA is insufficient to get the most out of the Blue Plan; other documents, such as the Ecological Characterization must also be consulted.
- ▶ Blue Plan helps federal agencies access human use data not previously known and make decisions to better avoid impacting those uses
- ▶ Blue Plan helps short-staffed agencies make decisions more efficiently.

**3.3.3 NON-PERMITTING FEDERAL AGENCY USE**

Some federal agencies see value in the coordination aspects of the Blue Plan outside of the context of permitting. Most notably, the EPA and the Department of Transportation's Maritime Administration (MARAD) see the information and guidance in the Blue Plan as a boon to advance some of the programs they lead in the Sound.

MARAD maintains America's Marine Highways program as a promotional tool for advancing the use of marine shipping over truck-and-trailer transport of goods and for increasing public access to navigable waterways. Marine Highways are conceptual waterborne transportation



Photo: Christian Fox

routes that offer the potential of reducing congestion on paved roads. MARAD supports implementation of Marine Highways by providing infrastructure-enabling funding to applicants, conducted in partnership with state sponsors of private project proponents. Currently LIS has two Marine Highways projects: the ferries at New London /Orient Point and Bridgeport /Port Jefferson, and the Harbor Harvest initiative in the western Sound. Cross Sound Ferry in New London and Harbor Harvest have each received multi-million-dollar grants to develop the infrastructure necessary to support their programs. For all of their activities MARAD depends on spatial data: for the evaluation of project proposals to fund, for identifying new connections to Marine Highways to promote, for planning activities conducted with other federal agencies such as the Coast Guard, and on the regulatory side to ensure projects are consistent with existing State plans. The Blue Plan integrates into all of this, and will be useful not just to MARAD in their LIS endeavors but also to project proponents and state sponsors as well. As in many other instances, the Blue Plan will allow coordination that incorporates working waterfronts and existing public access points, as well as helping reduce conflict by allowing project proponents to identify and avoid areas susceptible to impacts from new development. While the Blue Plan

itself may not provide connection with programs that may benefit, readers of this Practitioners Guide should note that there may be similar interests between the Bridgeport Waterfront Advisory Board efforts to redevelop the city's waterfront economy, the existing familiarity of MARAD with the Bridgeport ports, and the emerging interest by offshore wind developers in developing a maintenance and operations hub in Bridgeport. It is conceivable that these entities may be able to come together and, using the Blue Plan as a communications and coordination tool, identify opportunities to benefit all of the Park City.

Staff of the EPA contacted for this Guide define their organization as a water quality agency with a focus that includes everything from habitat to fish passage. They also report they are more of an end user than a data contributor on public viewers and data portals. One of the many responsibilities the EPA carries out is conducting Environmental Assessments (EA) and Environmental Impact Statements (EIS) in association with the Corps (the primary federal permitting agency in LIS) for large projects; these documents are intended to be decision support tools in determining if a project should proceed based on minimization of impacts to natural resources and human health. One of the primary goals of both of these documents is to evaluate

alternatives to the proposed activity; for instance, is the project less damaging if sited in a different location or uses different technology. Broad trade-offs are considered from many facets of the proposed project and conceivable alternatives, beyond just the immediate impacts; for example, analyzing what the impact of the project will be on traffic and congestion, and which alternatives will reduce the number of cars on the road overall.

Because EPA is not responsible for permitting in most cases, once a project moves from the EA or EIS evaluation phase to permitting the agency generally takes a back seat. However, the EPA may provide input on specific factors such as details of anadromous fish life stages and habitat needs and work with the Corps to steer the project approval towards the preferred alternative. Because EA and EIS are based primarily off existing data and consultation with experts and agencies, staff at EPA report that the Blue Plan will be useful to all organizations involved throughout the project proposal and evaluation cycle. The ESA information and Ecological Characterization in the Blue Plan will allow EPA and the Corps to determine what pre- and post-construction surveys and monitoring need to focus on in order to characterize impacts had by any large projects, and to draft mitigation plans early in the permitting process. Many of the ESA components have a seasonal dimension; having this level of detail will allow alternative options presented in EA and EIS to offer more flexibility and precise recommendations for impact avoidance.

The Bureau of Offshore Energy Management (BOEM) also evaluates large offshore energy project proposals both through leasing of energy-producing areas and through approval of specific energy activities. However, unlike EPA and the Corps, BOEM has no jurisdiction in LIS since the agency is exclusively limited to federal waters. Yet BOEM is also required to consider the impacts of offshore activities on coastal states and their waterways as part of its review. Similarly, though the agency would not supersede a state decision on components of an energy project in state waters (say, the cable landing from an Off Shore Wind (OSW) development), BOEM would want to know what data

the state was using to see where state priorities lay and what quality of data they were using for decision support. As a result, BOEM will need to become familiar with the data and policies of the Blue Plan as renewable energy projects are developed off the East Coast. One of the most easily-imagined uses of the Blue Plan by both Connecticut agencies and OSW developers is the evaluation of cable proposals and cable routing scenarios; in fact, one developer interested in building a “shared offshore ocean grid” transmitting power from different wind energy projects is already scoping the possibility of landing one or more cables in Connecticut, and is aware of the Blue Plan as both an information source and a permitting guidance document. One of the primary concerns BOEM has with regard to state-based data is the quality and completeness of that data; there are very specific data-quality requirements for use at the federal level and not all state-produced material meets these standards. Given that much of the Blue Plan data comes from regional ocean portals or federal sources, and in-state data used was specifically selected to meet this level of rigor, the only reason that BOEM would not use it is because all of the Sound exists outside of their area of influence. When conducting proposal reviews within its own jurisdiction, BOEM invites state natural resource managers to comment on draft EIS or submit letters directly stating what datasets they care about and how they use and understand those data. Since much of the Blue Plan data is part of larger regional datasets, BOEM encourages Connecticut (and other states) to identify which specific data they would like to see used to evaluate draft EIS associated with OSW development so that findings are consistent with the states’ own procurement process and evaluation.

#### **Lessons Learned:**

- ▶ The Blue Plan can help identify working waterfront connection opportunities for America’s Marine Highway program.
- ▶ The Blue Plan will help applicants to federal funding programs, such as MARAD Fast Track grants, plan infrastructure needs and identify potential conflicts and opportunities.

- ▶ The Blue Plan will help identify and evaluate alternative scenarios in the federal NEPA EA and EIS processes.
- ▶ By using the ESA and SHUA defined in the Blue Plan, Connecticut will be better able to communicate priorities in evaluating offshore energy project impacts with BOEM, and BOEM may be able to extrapolate these evaluations of existing datasets for the OCS region.
- ▶ There is future and existing opportunity for federal, local, and industry to partner in developing Connecticut's urban port facilities to support OSW by using the Blue Plan as a communications and planning tool

### 3.3.4 USCG, SECTOR LONG ISLAND SOUND

The United States Coast Guard (USCG) has close ties to Long Island Sound. The Coast Guard Academy is located in New London, CT, which is also homeport to the Coast Guard's sail training barque *USCGC Eagle*. Local USCG duties are handled by Sector Long Island Sound, headquartered in New Haven, CT, with a jurisdiction that extends across the entire Sound from Connecticut's western border with New York to Watch Hill in Rhode Island. Sector staff are responsible for maintaining navigability, ranging from aids to navigation to icebreaking; safety and prevention, including search and rescue, port safety, and vessel inspection; national defense; enforcement; and waterways and natural resources management.

The Sector leads several programs that will benefit from the Blue Plan, and staff anticipate working with the Blue Plan Development Team to learn more about the Blue Plan to better utilize the information it contains. These programs are both permitting-based and coordination-based, but both will use the Blue Plan in similar ways.

The Coast Guard issues Marine Event permits to the hosts of activities that will either be conducted on-water or expect to entertain spectators on-water. Some of these events are large in both geography and participation,

such as New London Sailfest; others are much smaller and private, such as a personally-hosted fireworks show. Marine Event permits are needed from the USCG for any short-term activity that has the potential to impact navigability and safety at sea or natural, cultural, and archaeological resources, and applications are reviewed with regard to economic and environmental impacts. Evaluation of these applications is not a lengthy process; the Coast Guard uses an internal Decision Support System (DSS) that contains geospatial information on these sensitive areas, and it typically takes only a few hours to review an application and make a determination. The Coast Guard expects that all the Blue Plan ESA and SHUA and the map viewer tool will be useful in their review of Marine Event applications, allowing for a more detailed understanding of what resources may be impacted than what is available in their DSS. In some cases, after review, the Coast Guard will determine that they neither need to issue nor deny a permit. However, the applicant will still need to pursue a comparable State permit from either Connecticut or New York; in these cases USCG staff advise the applicant of the review results and what they will need to address in their application to the State. Because applicants do not have access to the DSS, USCG staff are excited to have the Blue Plan map viewer as a public resource that they can steer applicants to use themselves, in order to proactively avoid areas that are susceptible to the specific impacts caused by their particular event. The fact that the USCG is eager to use the Blue Plan is notable: in general, the standard operating procedure is to use the DSS only, as state-generated datasets are seen as too piecemeal to be applicable. However, in this case, the Blue Plan is seen not only as a companion to the DSS for the identification of resources and activities that may be impacted, but also as an enhancement of their process with applicants. By pointing applicants to this tool, thereby the USCG is continuing their mission of resource protection and upholding safety at sea by influencing events held to be more informed by conditions in the Sound that would not be immediately obvious otherwise.

Marine Event permits are not the only opportunity to use the Blue Plan as a coordinating informational resource: there are numerous venues around LIS that the USCG



Photo: Emily Hall

either hosts or attends that bring the local working waterfront community together to exchange information, discuss upcoming activities, plan for needed projects, and prepare disaster- and emergency-response plans. These venues include the LIS Harbor Safety Forum, local CT Port Area Marine Group meetings, and pollution response scenario planning and training activities conducted with local officials and other federal agencies. Of these efforts, pollution response planning (e.g., to an oil spill) is anticipated to particularly benefit from the Blue Plan spatial information: this Area Contingency Plan (Burg, 2010) is a formal document that is reviewed every five years with an inter-agency training and practice exercise conducted every two years. While the plan is maintained by the USCG, it is created with local partners from the working waterfronts and ports around LIS and numerous state and federal agencies. USCG staff report that including the Blue Plan information as a component of both the response plan and the training exercises will make for better informed decisions regarding resources to be protected as well as potential hazards or concerns

affecting response crews. In all these efforts, the Blue Plan map viewer and inventory provide accessible information that can be used in conjunction with other topic-specific datasets; while in some cases users may be able to download the Blue Plan Special Areas and combine them with other layers, it is more anticipated that the underlying navigational chart base layer will be the most common frame of reference to compare and align discussions.

**Lessons Learned:**

- ▶ Coast Guard Sector Long Island Sound anticipates using the Blue Plan to evaluate Marine Event Permit requests, thus increasing environmental protection and safety at sea.
- ▶ USCG SLS also anticipates directing permit applicants to the Blue Plan to use in planning activities and submitting proposals to both the USCG and State regulators
- ▶ The Blue Plan will be a helpful resource in preparing

disaster and emergency response plans, conducting drills and training based on these plans with a broad spectrum of participants.

- The Blue Plan can be combined with other tools, including federal platforms, such as the USCG Decision Support System and topic-specific data sets to achieve a more complete picture of LIS than was previously available.

### 3.3.5 GUIDING IMPLEMENTATION AND OPERATIONS OF CONNECTICUT'S PROPOSED NERR

Connecticut is in the process of designating a National Estuarine Research Reserve (NERR) in Eastern Long Island Sound. As of 2020 the NERR System is “a network of 29 coastal areas designated to protect and study estuarine systems. Created by the [Federal] Coastal Zone Management Act, the reserves are a formal partnership between [National Oceanic and Atmospheric Administration (NOAA)] and coastal states. Each reserve is managed by a lead state agency or university, with input from local partners, for which NOAA provides funding, guidance, and technical assistance. The reserves...focus on Resource Stewardship, Training, and Education” (Connecticut Department of Energy and Environmental Protection, 2020). Designating a NERR will allow Connecticut to leverage a long-standing, nation-wide suite of resources and expertise to assist in addressing the management, scientific, and educational needs of Long Island Sound. As the NERR system does

not impose any Federal restrictions, a Connecticut NERR would not exclude or restrict any existing uses, but would instead provide information and enhanced opportunities to maintain and improve the health of the Sound and thereby the Connecticut economy. The Connecticut NERR is being guided by input from local LIS-dependent communities and experts, and in close collaboration with NOAA. As of this writing a proposed site was submitted to NOAA and has been approved to proceed with the rest of the designation process, which will include a management plan and an Environmental Impact Statement (EIS). Both aspects will require public involvement and input.

As the Blue Plan development process was proceeding at the same time, the information and tools in the final Blue Plan were not used in the site selection of the proposed NERR. However, planning staff at all levels of government, from municipalities through NOAA Office for Coastal Management, anticipate the Blue Plan will be a useful tool when it comes to the EIS and management planning efforts and subsequent operations. The Blue Plan ESA and Ecological Characterization identify areas that are particularly sensitive and ecologically valuable; having not only this spatial information but also the description and definition of each ESA type will be useful to use as new data is collected within the NERR. New data can be analyzed, in part, through the criteria used to define the ESA to produce detailed datasets consistent and comparable with the rest of the Sound and provide context for research and education programs within



Photo: Nathan Frohling

the NERR. Additionally, the ESA may be used to specify priorities for Connecticut that a Reserve can assist with; clarifying at least some of the natural and biological features that resources managers may be interested in conserving or restoring.

The NERR is not just about LIS ecology, though; it supports the entire LIS system, including existing and new human uses. The Blue Plan provides insight here too. Existing uses can be recognized by the Reserve more readily, and the constituencies that make up those uses will be more easily identified and invited into the planning process. This means that uses like aquaculture will be able to participate and share their desires and needs for the future, leading to broader understanding and support of the NERR program. There are also development pressures; some industrial, such as the expansion of the Electric Boat facility in Groton to provide the next generation of submarines and national defense; some restorative, such as seagrass management plans and oyster reef restoration efforts. These are all endeavors beneficial to Connecticut's economy and quality of life, and the CT NERR – like the 29 other Reserves - will need to balance conservation, research, and educational opportunity with these ongoing efforts. This is not necessarily a conflict of interest, however. By leveraging the information available for planning in the Blue Plan, the NERR may be able to offer creative opportunities such as pairing students with aquaculturalists or engineers in work-study partnerships to rebuild Connecticut's oyster reefs and continue nitrogen reduction efforts.

## 4. CONCLUSION

The Blue Plan is broadly applicable outside of its statutory function as permitting guidance in four Connecticut regulatory programs. The Blue Plan is not all things to all people, and it does not fill every need or answer every question about Long Island Sound. But it does give us a robust capacity to have those discussions. It gives us access to information that would not have existed otherwise, and it gives us a framework to use that information to make decisions that minimize conflict

The Blue Plan will be able to help coordinate this by not only providing insight into areas that are sensitive to impacts, but also areas that are conducive to given activities or are unique study sites that lead to new discoveries. Having this information mapped and readily available – along with innovative programming – could make the Connecticut NERR an example of cross-sector collaboration to enable a heavily-used waterway to remain ecologically intact and to provide services so many people depend on.

### Lessons Learned:

- ▶ Blue Plan will be a go-to document when preparing Management Plan and EIS for the CT NERR; similarly, it may be a go-to document for similar planning activities, such as shellfish restoration, in LIS.
- ▶ The Blue Plan can demonstrate the value of Connecticut industries such as aquaculture and help them plan their place and continued growth in collaboration with the CT NERR.
- ▶ Blue Plan ESAs and Ecological Characterization provide not only spatial data but also an evaluation process that NERR planners can use in identifying research, conservation, and educational targets.
- ▶ The Blue Plan can serve as a communications platform for the many constituencies, managers, and planners to discuss programmatic options and priorities for the CT NERR.

and maximize understanding. This Guide has sought to overview some of the ways the Blue Plan can benefit the myriad of interests in the Sound; it is hoped that these examples can be helpful to you, the reader, in finding ways to apply the Blue Plan tools in your work.

At the time of this writing the Blue Plan is a very new document. It has not yet been adopted into law; accordingly, there are no examples of formal implementation. Yet the examples of informal implementa-



Photo: Nathan Frohling

tion here demonstrate the suite of benefits the Blue Plan offers to the entire Long Island Sound community. If these boons are realized it will mean that the Blue Plan is working as intended: not just protecting what we already have, but also fostering collaboration in conservation and sustainable growth beyond anything that could be legislated. The greatest strength of the Blue Plan is not the map viewer or the policies or the Inventory. It is the voluntary implementation carried out in actions all across the Sound; it is smarter decisions that lead to working relationships grounded in collaboration and not confrontation.

For this collaboration to continue the Blue Plan must remain a contemporary tool; it must be updated, and it must be familiar to many users. For this reason everyone

interested in the Blue Plan is encouraged to remain actively involved with the Blue Plan Advisory Committee (BPAC) at the quarterly meetings. This BPAC is a good place to suggest updates and have questions not addressed here or in the [Users Guide](#) discussed. The Blue Plan team at DEEP may be contacted any time through the Blue Plan website ([www.ct.gov/deep/lisblueplan](http://www.ct.gov/deep/lisblueplan)) and email ([deep.blueplanlis@ct.gov](mailto:deep.blueplanlis@ct.gov)). Long Island Sound is a public trust shared between Connecticut and New York; it is the responsibility of us all to be stewards, to educate ourselves, and to advocate for what we want to see. Engaging with the ongoing Blue Plan process is an easy and rewarding way to do all of these, to ensure the Urban Sea remains a place and a resource that supports all that we love in a changing, evolving world.

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